Check List the journal of biodiversity data

NOTES ON GEOGRAPHIC DISTRIBUTION

Check List 11(4): 1670, 2 June 2015 doi: http://dx.doi.org/10.15560/11.4.1670
ISSN 1809-127X © 2015 Check List and Authors

First record of the Crested Eagle, *Morphnus guianensis* (Daudin, 1800) (Aves, Accipitridae) in the Cerrado of Minas Gerais state, Brazil

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Abstract: We present a new record of the Crested Eagle, *Morphnus guianensis* (Daudin, 1800), a rare forest eagle of the Neotropics on 22 May 2012 at a Cerrado area in Minas Gerais state, southeastern Brazil. The species has only two historical records in the state, both at areas formerly covered by Atlantic Forest. The finding raises the expectations for the maintenance of the species in the state, stressing the fact that this is the first species record in a Cerrado area in Eastern Brazilian states.

Key words: Crested Eagle, arpía menor, uiraçu-falso, raptors, geographical range, Neotropical savanna

The Crested Eagle, *Morphnus guianensis* (Daudin, 1800), is one of the rarest Accipitriformes in the Neotropics. Adults resemble the juvenile of the Harpy Eagle, *Harpia harpyja* (Linnaeus, 1758), but are lighter, smaller, and have a single crest, not divided into two horns as in the latter (Thiollay 1994). There are dark phase individuals, similar to the adults of the Black Hawk-Eagle, *Spizaetus tyrannus* (Wied, 1820) (Sick 1997) and intermediate plumage patterns are also known (Hilty and Brown 1986).

Its range spreads across the Neotropics from Guatemala and Honduras in Central America, at west-central Colombia west of the Andes. In the east of Andes in South America the species is found at countries up to Paraguai and northeastern Argentina (Misiones) (Thiollay 1994; Sick 1997; Ferguson-Lees and Christie 2001). Inhabits humid lowland and subtropical forests and, in its southern range, it is known to occur in gallery forests (Hilty and Brown 1986; Thiollay 1994, Ferguson-Lees and Christie 2001). In Brazil the species has been known from a couple of sites formerly covered by evergreen or semidecidual forests in the Amazon and the Atlantic forest realms (Sick 1997) with one historical record (1899) in the extreme northwest of the state of Rio Grande do Sul (Belton 2000). All the recent 19 photographic records in the internet for Brazil were obtained in the Amazonian part of the country (Wikiaves 2013).

There are only two records of *M. guianensis* for the state of Minas Gerais, both in Atlantic Forest areas. The first record is given by Mattos et al. (1993) a bird seen at the Serra das Quatro Patacas currently encompassed by the Mata Escura Biological Reserve, in Jequitinhonha county (16°23′ S, 041°02′ W) during the 1970s (G. T. Mattos pers. comm.). The second record was done at Caparaó National Park, at Alto Caparaó county (20°24′23″ S, 041°50′13″ W) (Zorzin et al. 2006).

Like other raptors, *M. guianensis* face conservation threats mainly due to habitat loss and hunting (Thiollay 1984; BirdLife International 2013) and their world conservation status is Near Threatened (IUCN 2013). Outside the Amazon the species has been vanished, being classified as critically endangered in Minas Gerais (Fundação Biodiversitas 2007; COPAM 2010), Espírito Santo (Simon et al. 2007), São Paulo (SÃO PAULO 2008) and Santa Catarina (CONSEMA 2011), probably extinct in Rio de Janeiro (Alves et al. 2000), extinct in the wild in Rio Grande do Sul (Fontana and Bencke 2003) and probably extinct in Paraná (Mikich and Bernils 2004). Although eastern Brazilian populations have been shrinking along the decades, the wide distribution of the Crested Eagle in the Amazon has prevented it to be classified as an officially threatened species at the national level (Silveira and Straube 2008).

We report what seems to be the first known record of *M.guianensis* in a Cerrado area in eastern Brazil. (Thiollay 1994; Silva 1995; Pinheiro and Dornas 2009; Faria et al. 2009; Tubelis 2009) The observation took place in a ecotone between Cerrado *sensu stricto* and gallery forest at the Reserva do Meleiro, a 1,366 ha

private reserve owned by Plantar Empreendimentos Florestais, in the municipality of Felixlândia, central Minas Gerais (18°49′56″ S, 044°42′74″ W), bordering Curvelo municipality (Figure 1). On 22 May 2012, at 16:15 h, A.Z.S and L.L.M observed an individual of Ornate Hawk-Eagle, *Spizaetus ornatus* (Daudin, 1800), was seen perched in a tall eucalyptus tree (ca. 15 m) in a scattered patch of about 10 leftover trees emerging from a recovering gallery forest (Figure 2). In the same occasion a Crested Eagle was also seen about 30 m from *S. ornatus* (Figure 3). The bird remained perched for roughly one hour even after having noticed the observers. The same point was visited again on 3 July 2012 and 15 December 2012. During the second visit A.Z.S and L.L.M then documented a Crowned Eagle, *Urubitinga coronata* (Vieillot 1817) vocalizing, probably soaring above the fragment (Souza 2012) and, in the third visit, A.Z.S and R.R visualized an Ornate Hawk-Eagle calling while soaring above the fragment, at about 1,000 m from the point where the crested Eagle was seen seven months before. These two species also have conservation problems. *Spizaetus ornatus* is Near Threatened according to the world conservation status (IUCN 2013), Endangered in Minas Gerais (COPAM 2010) and Paraná (Mikich and Bernils 2004), Critically Endangered in São Paulo (SÃO PAULO 2008), Espírito Santo (Simon et al. 2007) and Santa Catarina (CONSEMA 2011), and probably extinct in Rio de Janeiro (Alves et al. 2000) and Rio Grande do Sul (Fontana and Bencke 2003). *Urubitinga coronata* is Endangered in the world conservation status (IUCN 2013), has a Vulnerable status in Brazil (Silveira and Straube 2008) and Paraná state (Mikich and Bernils 2004), is Endangered in Minas Gerais (COPAM 2010), Critically Endangered in São Paulo (SÃO PAULO 2008), Santa Catarina (CONSEMA 2011) and Rio Grande do Sul (Fontana and Bencke 2003).

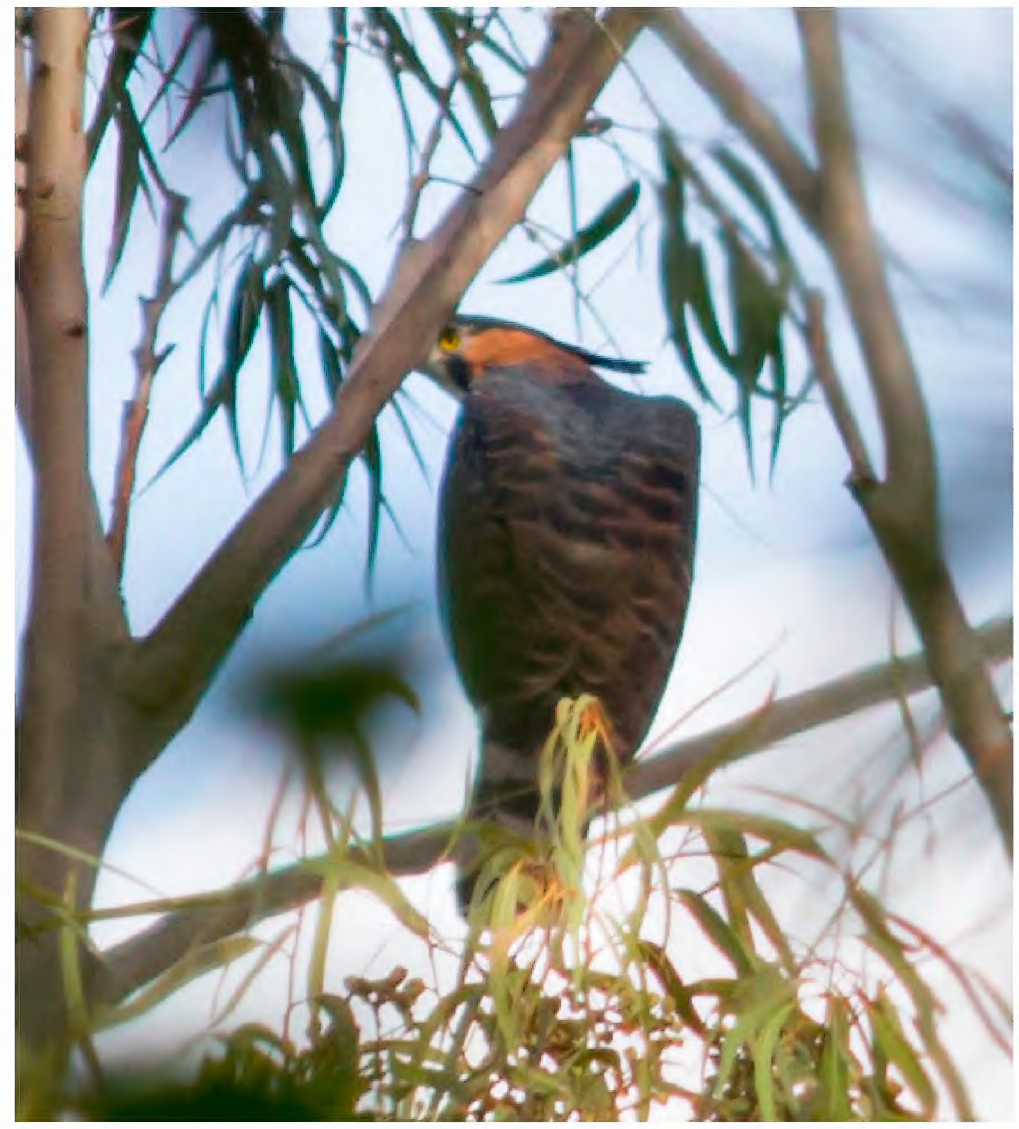

Figure 2. Ornate Hawk-Eagle *Spizaetus ornatus* photographed in Cerrado sensu stricto, in Felixlândia municipality, Minas Gerais, southeastern Brazil, on 22 May 2012. (Photo: A. Z. S.).

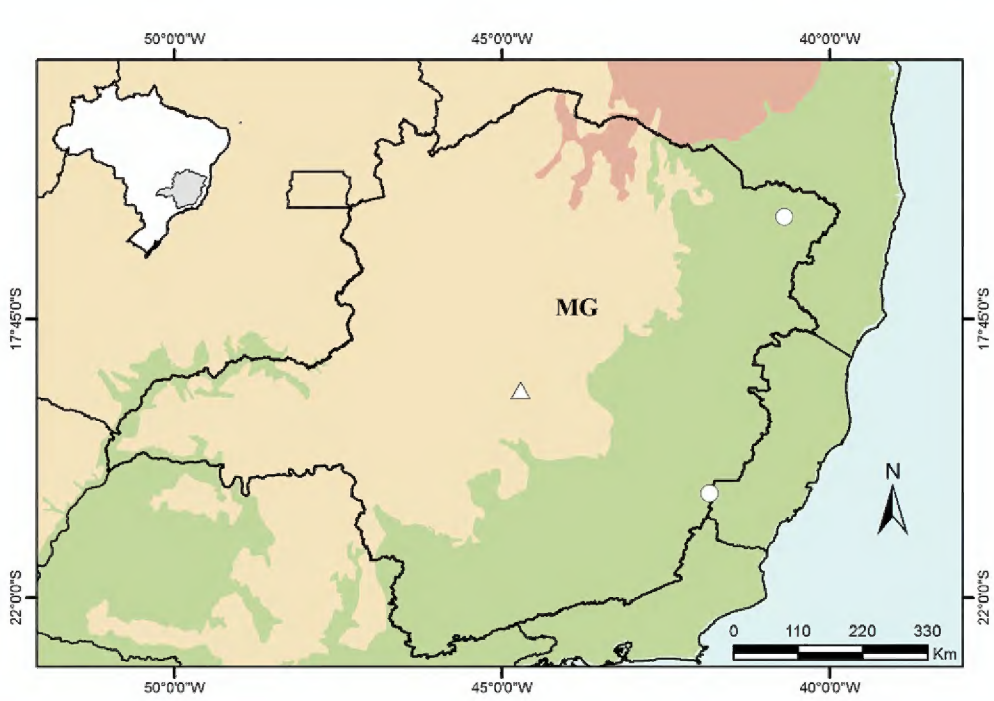

Figure 1. Records of *Morphnus guianensis* in Minas Gerais state, southeastern Brazil. Circles represent previously know records and triangle represents new site record. Light green (■) represents the Atlantic Forest domains, light brown (■) the Caatinga and beige (■) the Cerrado (Source IBGE 2008).

Although it is common knowledge among the ornithological community that *M. guianensis* needs vast tracts of primary forest to live (Withcare 2012; Ferguson-Lees and Christie 2001; Jullien and Thiollay 1996) our record could suggests that the species could be adapting to fragmented areas or open areas as observed by Crease and Tepedino (2013) in Venezuela. However, our sole record does not support such hypothesis, which is also weakened by the extinction of the species in other fragmented areas (Jullien and Thiollay 1996). Oliveira and Silva (2006) attributed a similar record for *H. harpyja* in a Cerrado region, to its migratory behavior or dispersal. As there is no report of migration nor of persistent use of fragmented areas by *M. guianensis*, adult vagrancy or postnatal dispersal is the best explanation for the records we have done. Albuquerque et al. (2006) report on two sightings of *M. guianensis* in ecotonal areas between evergreen forests and natural grasslands of Santa Catarina state, but they also discard the possibility of adaptation to anthropized areas. There is no larger area of contiguous Cerrado larger than the Reserva do Meleiro in a radius of about 35 km and more extensive preserved areas such as the neighbor Serra do Cabral and part of the Espinhaço Range, are dominated by campos rupestres. However, these mountain ranges have forests in deep ravines which may work as refuges for large raptors (Canuto et al. 2012). Thus, the possibility that the individuals seen are effectively living in the region, using the Reserva do Meleiro as an important part of a multi-habitat territory must be investigated.

Figure 3. Crested Eagle *Morphnus guianensis* photographed in Cerrado sensu stricto, in Felixlândia municipality, Minas Gerais, southeastern Brazil, on 22 May 2012. (Photo: A. Z. S.).

Ideally, satellite tracking should be used to shed light on this issue.

The syntopy of *M. guianensis*, *S. ornatus* and *U. coronata* has been already reported in southern Brazil (Albuquerque et al. 2006). Although our records are not concurrent, they indicate that the same could happen at Felixlândia region. The Reserva do Meleiro and the other few areas of protected Cerrado of similar size in the region were created by the forestry companies established in the region since the 1970s and are maintained by them. Their creations were demanded as environmental compensation actions for the conversion of large areas of Cerrado into eucalyptus monocultures. As the farmer nearby do not maintain any areas of native Cerrado of similar size, even isolated or in blocks, that could maintain species demanding large forested areas, such as the threatened raptors reported here. Although the Reserva do Meleiro is large for the local standards it is tiny to conserve, by itself, a population of large raptors. However, it exemplifies the fact that the creation and maintenance of large and contiguous reserves by companies, notwithstanding the vast areas they converted into eucalyptus monoculture, must be stressed as an important contribution to bird conservation. In fact, given the highly degree of devastation of the Brazilian Cerrado by the agribusiness and the projections for the inefficiency of the currently set of reserves to conserve Cerrado birds under climate change in the decades to come (Marini et al. 2009) these reserves will be even more important to bird conservation in general. However, its effectiveness for the conservation of raptors, especially those focused in this article should be evaluated by long-term monitoring.

ACKNOWLEDGEMENTS

We thank Planep-Plantar Empreendimentos S. A. for supporting the bird monitoring activities that allowed us to record the raptors. Izaías de Jesus Rodrigues and Thiago Morais helped with logistical support. João Victor A. Lacerda and Henrique Caldeira Costa for reviewing the manuscript. Gabriel Mello for editing the photographs. Giancarlo Zorzin for the suggestions.

LITERATURE CITED

Albuquerque, J.L.B., I.R. Ghizoni-Jr, E.S. Silva, G. Trannini, I. Franz, A. Barcellos, C.B. Hassdenteufel, F.L. Arend and C. Martins-Ferreira. 2006. Águia-cinzenta (*Harpyhaliaetus coronatus*) e o gavião-real-falso (*Morphnus guianensis*) em Santa Catarina e Rio Grande do Sul: prioridades e desafios para sua conservação. Revista Brasileira de Ornitologia 14(4): 411–415.

Alves, M.A.S., J.F. Pacheco, L.A.P. Gonzaga, R.B. Cavalcanti, M.A. Raposo, C. Yamashita, N.C. Maciel and M. Castanheira. 2000. Aves; pp.113–124, in: H.G. Bergallo, C.F.D. Rocha, M.A.S. Alves and M.V. Sluys (orgs.). A fauna ameaçada de extinção do estado do Rio de Janeiro. Rio de Janeiro: EdUERJ.

Belton, W. 2000. Aves do Rio Grande do Sul: Distribuição e Ecologia. São Leopoldo: Editora Unisinos. 584 pp.

BirdLife International. 2013. Species factsheet: *Morphnus guianensis*. Accessed at http://www.birdlife.org, 10 October 2013.

Canuto, M., G. Zorzin, E.P.M. Carvalho Filho, C.E.A. Carvalho, G. D. M. Carvalho and C.E.T. Benfica. 2012. Conservation, management and expansion of protected and non-protected tropical forest remnants through population density estimation, ecology and natural history of top predators; case studies of birds of prey (*Spizaetus* taxon); 359–388, in: P. Sudarshana, M. Nageswara-Rao, J.R. Soneji (org.). Tropical Forests. 1st edition. Volume 1. Rijeka: INTech.

Crease, A. and I. Tepedino. 2013. Observations at a nest of Crested Eagle *Morphnus guianensis* in the southern Gran Sabana, Venezuela. Cotinga 35: 90–93.

CONSEMA. 2011. Conselho Estadual do Meio Ambiente de Santa Catarina. Resolução CONSEMA nº 002, de 6 de dezembro de 2011. Reconhece a lista oficial de espécies da fauna ameaçada de extinção no estado de Santa Catarina e dá outras providências. DOE-SC. 20/12/2011.

COPAM. 2010. Conselho de Política Ambiental. Deliberação Normativa COPAM nº 147, de 30 de abril de 2010: Aprova a Lista de Espécies Ameaçadas de Extinção da Fauna do Estado de Minas Gerais. Diário do Executivo do Estado de Minas Gerais. 04/05/2010.

Faria, L.C.P., L.A. Carrara, F.Q. Amaral, M.F. Vasconcelos, M.G. Diniz, C.D. Encarnação, D. Hoffmann, H.B. Gomes, L.E. Lopes and M. Rodrigues. 2009. The birds of Fazenda Brejão: a conservation priority area of Cerrado in northwestern Minas Gerais, Brazil. Biota Neotropica 9(3): 223–240. http://www.biotaneotropica.org.br/v9n3/en/abstract?inventory+bn01109032009

Ferguson-Lees, J. and D.A. Christie. 2001. Raptors of the world. New York: Houghton and Mifflin Company. 320 pp.

Fontana, C.S., G.A. Bencke and R.E. Reis. 2003. Livro Vermelho da Fauna Ameaçada de Extinção no Rio Grande do Sul. Porto Alegre: EDIPUCRS. 623 pp.

Fundação Biodiversitas. 2007. Revisão das listas das espécies da flora e da fauna Ameaçadas de extinção do Estado de Minas Gerais. Relatório Final, Volume 3 (Resultados: Lista Vermelha da Fauna de Minas Gerais). Belo Horizonte: Fundação Biodiversitas. 104 pp.

Hilty, S.L. and W.L. Brown. 1986. A guide to the birds of Colombia. Princeton: Princeton University Press. 836 pp.

IUCN 2013. IUCN Red List of threatened species. Version 2013.1. Accessed at http://www.iucnredlist.org/, 10 October 2013.

Jullien, M. and J.M. Thiollay. 1996. Effects of rain forest disturbance and

fragmentation: comparative changes of the raptor community along natural and human-made gradients in French Guiana. Journal of Biogeography 23(1): 7–25. doi: 10.1046/j.1365-2699.1996.00963.x

Mattos, G.T., M.A. Andrade and M.V. Freitas. 1993. Nova lista de aves do Estado de Minas Gerais. Revisada, ampliada e ilustrada. Belo Horizonte: Fundação Acangaú. 20 pp.

Marini M.A., M. Barbet-Massin, L.E. Lopes and F. Jiguet. 2009. Predicted climate-driven bird distribution changes and forecasted conservation conflicts in a Neotropical savanna. Conservation Biology 23(6): 1558–1567. doi: 10.1111/j.1523-1739.2009.01258.x

Mikich, S.B. and R.S. Bérnils. 2004. Livro Vermelho da fauna ameaçada no Estado do Paraná. Curitiba: Instituto Ambiental do Paraná. 764 pp.

Oliveira, A.L and R.S. Silva. 2006. Registro de harpia (*Harpia harpyja*) no cerrado de Tapira, Minas Gerais, Brasil. Revista Brasileira de Ornitologia 14(4):433–434.

Pinheiro, R.T. and T. Dornas. 2009. Distribuição e conservação das aves na região do Cantão, Tocantins: ecótono Amazônia/Cerrado. Biota Neotropica 9(1): 187–205. http://www.biotaneotropica.org.br/v9n1/pt/abstract?inventory+bn02609012009

SÃO PAULO. 2008. Decreto Estadual Nº 53.494, de 2 de outubro de 2008. Declara as espécies da fauna silvestre ameaçadas, as quase ameaçadas, as colapsadas, sobrexplotadas, ameaçadas de sobrexplotação e com dados insuficientes para avaliação no estado de São Paulo e dá providências correlatas. Diário Oficial [do] Estado de São Paulo, Poder Executivo, São Paulo, SP, 3/10/2008, Seção I: 1–10.

Sick, H. 1997. Ornitologia Brasileira. Rio de Janeiro: Editora Nova Fronteira. 912 pp.

Silva, J.M.C. 1995. Birds of the Cerrado region: South America. Steenstrupia 21(1): 69–92.

Silveira, L.F. and F.C. Straube. 2008. Aves; pp. 378–666, in: A.B.M. Machado, G.M. Drummond and A.P. Paglia (orgs.). Livro Vermelho da Fauna Brasileira Ameaçada de Extinção. Volume 2. Brasília: Ministério do Meio Ambiente.

Simon, J.E., P.T.Z Antas, J.F. Pacheco, M.A. Efe, R. Ribon, M.A. Raposo, R. Laps, C. Musso, J.A. Passamani and S.G. Paccagnella. 2007. As aves ameaçadas de extinção no estado do Espírito Santo; pp. 47–59, in: M. Passamani and S.L. Mendes (orgs.). Espécies da fauna ameaçadas de extinção no Estado do Espírito Santo. Vitória: Instituto de Pesquisas da Mata Atlântica.

Souza, A.Z. 2012. WA1129854, *Urubitinga coronata* Vieillot, 1817. Accessed at http://www.wikiaves.com.br/1129854, 23 October 2013.

Thiollay, J.M. 1984. Raptor community structure of a primary rain forest in French Guiana and effect of human hunting pressure. Raptor Research 18(4): 117–122.

Thiollay, J.M. 1994. Family Accipitridae: hawks and eagles; p. 191, in: J. Del Hoyo, A. Elliott and J. Sargatal. Handbook of the Birds of the World. Volume 2. New World Vultures to Guineafowl. Barcelona: Lynx Edicions.

Tubelis, D.P. 2009. Veredas and their use by birds in the Cerrado, South America: a review. Biota Neotropica 9(3): 363–374. doi: 10.1590/S1676-06032009000300031

Wikiaves. 2013. *Morphnus guianensis*. Accessed at http://www.wikiaves.com.br/uiracu-falso, 19 October 2013.

Withcare, D.F. (ed.). 2012. Neotropical birds of prey: biology and ecology of a forest raptor community. Ithaca: Cornell University Press. 412 pp.

Zorzin, G., C.E.A Carvalho, E.P.M. Carvalho-Filho and M. Canuto. 2006. Novos registros de Falconiformes raros e ameaçados para o estado de Minas Gerais. Revista Brasileira de Ornitologia 14(4):417–421.

Authors' contribution statement: LLM wrote the text; LLM, AZS and RR collected the data; RR and AZS reviewed the text.

Received: 2 April 2014
Accepted: August 2014
Academic editor: Thiago V. V. Costa